TENNESSEE DEPARTMENT OF
EDUCATION
FIRST TO THE TOP

Advanced Computer Applications

Primary Career Cluster:	Business Management & Administration
Consultant:	Casey Haugner Wrenn, (615) 532-4879, Casey.Haugner@tn.gov
Course Code(s):	5904
Prerequisite(s):	*Computer Applications* (3638, 5891)
Credit:	1-2
Grade Level:	11-12
Graduation Requirements:	This course satisfies one or two of three credits required for an elective focus when taken in conjunction with other Business Management & Administration courses.
Programs of Study and Sequence:	This is the fourth and final course in the *Office Management* program of study.
Aligned Student Organization(s):	DECA: http://www.decatn.org FBLA: http://www.fblatn.org Sarah Williams, (615) 532-2829, Sarah.G.Williams@tn.gov
Coordinating Work-Based Learning:	Teachers are encouraged to use embedded WBL activities such as informational interviewing, job shadowing, and career mentoring. For information, visit http://tn.gov/education/cte/work_based_learning.shtml.
Available Student Industry Certifications:	Students enrolled in this course may pursue Microsoft Office Specialist (MOS), IC^3 (GS4), or other similar certification.
Dual Credit or Dual Enrollment Opportunities:	There are no known dual credit/dual enrollment opportunities for this course. If interested in developing, reach out to a local postsecondary institution to establish an articulation agreement.
Teacher Endorsement(s):	030, 037, 039, 041, 052, 054, 055, 056, 057, 152, 153, 158, 201, 203, 204, 311, 430, 434, 435, 436, 471, 472, 474, 475, 476
Required Teacher Certifications/Training:	None
Teacher Resources:	http://www.tn.gov/education/cte/BusinessManagementAdministration.shtml

Course Description

Advanced Computer Applications prepares students to continue postsecondary training in business-related programs, provides advanced training for students pursuing a career in administrative and information support, and supports obtaining an industry certification in specific software applications (such as the Microsoft Office Suite). Course content and projects are meant to simulate workplace scenarios and draw on skills related to communications, operations, management, and teamwork in order to accomplish information management goals. Upon completion of this course, proficient students will be fluent in a variety of information management software applications and will be prepared to sit for the Microsoft Office Specialist (MOS), IC^3 (GS4), or other similar certification. Standards in this course are aligned with Tennessee State Standards for English Language Arts & Literacy in Technical Subjects and Tennessee State Standards in Mathematics.**

Program of Study Application

This is the fourth and final course in the *Office Management* program of study. For more information on the benefits and requirements of implementing this program in full, please visit the Business Management & Administration career cluster website at http://www.tn.gov/education/cte/BusinessManagementAdministration.shtml.

Course Standards

Secure Technology Operations

1) Correctly and safely execute basic file management operations on a typical personal computer and shared storage media, including the opening, creating, copying, moving, deleting, and renaming of files and folders, as well as searching for a specified file or folder on local hard drives, removable storage, or networked storage media. Build upon this knowledge to effectively use cloud storage and/or online digital collaboration platforms and file sharing applications. Appraise file storage needs for a given project, recommend and effectively employ the appropriate file storage and sharing solution given project characteristics. (TN Reading 3)

2) Correctly and safely import and export digital files (such as text, audio, video, and picture files in a variety of formats) from local and networked devices, choosing and employing the correct cables, removable storage media, and/or hardwired or wireless network connections. Perform basic troubleshooting as needed for enhancing productivity and optimizing performance of devices such as cameras, scanners, printers, and tablets. Perform basic operations to change file types for effective use in typical software applications. For example, connect an iPad via a wireless network, download photos from the device, and change the format of the photos from .jpg to .png format for use in a presentation application. (TN Reading 3)

Word Processing and Publishing

3) Building on standards from *Computer Applications*, create and manage professional documents of business activities to communicate with internal and external stakeholders. Fluently navigate word processing software to complete the following:
    a. Create a document from a blank document, template, imported file, or non-native document imported into word processing software
    b. Search for text within a document, insert hyperlinks, create bookmarks and use "Go To" functionality efficiently
    c. Modify page setup, select and employ appropriate document themes and style set(s) for a given project and insert headers, footers, page numbers, and watermarks
    d. Customize viewing options to effectively navigate a project using application tools such as zoom, toolbars, ribbons, macros, and shortcut keys
    e. Configure documents to scale, print, and save effectively, including maintaining backwards compatibility with previous software versions and password protecting if necessary

    (TN Reading 3; TN Writing 4, 6)

4) Effectively review, revise, and format text, paragraphs, and sections for a specific type of word processing file (such as a company report, memo, or invoice) by completing the following skills fluently:
    a. Revise documents using find and replace, copy and paste, AutoCorrect, and inserting special characters where needed
    b. Edit documents by changing font attributes, using format painter tools, highlighting where needed, and using WordArt
    c. Effectively determine and update paragraph, line, and character spacing
    d. Discriminate between appropriate and inappropriate ordering and grouping of text, objects, and sections, creating a professional document by preventing paragraph "widows" and "orphans," inserting breaks in pages and sections, utilizing columns where appropriate, and modifying object formatting for smooth flow of text

    (TN Reading 3, 4, 5; TN Writing 4, 5, 6)

5) Choose, employ, and manipulate text structure tools such as tables and lists to convey specific information accurately, demonstrating understanding of categories or hierarchies in the information, by completing the following skills fluently:
    a. Create a table by converting text, importing data from another application, defining table dimensions and labeling appropriately
    b. Review and modify existing tables using styles, fonts, sorting and formula capabilities, and cell margin and table dimension configurations
    c. Create and modify lists by employing bullets, numbering, and outlines and editing indention, spacing, and levels

    (TN Reading 3, 5; TN Writing 4)

6) Gather relevant information from multiple authoritative print and digital sources, assessing the strengths and limitations of each source, and integrate the source accurately into the document using citations, references, and footnotes. Select appropriate notation formatting for a given style, such as Modern Language Association (MLA), American Psychological Association (APA), or the Chicago Manual of Style.
    a. Integrate information into the text selectively to maintain the flow of ideas, avoid plagiarism, and over-reliance on any one source
    b. Insert, manage the locations, and auto-update endnotes, footnotes, citations, and bibliographies following a standard format
    c. Add and modify the font, format, location, and position of captions

    (TN Reading 1, 3, 8; TN Writing 4, 8, 9)

7) Integrate multiple sources of information presented in diverse formats and media in order to address a question or solve a problem.
    a. Insert quick parts, textboxes, and customizable building blocks
    b. Insert and format simple shapes and SmartArt, formatting their properties (color, size, shape) and text wrapping to seamlessly integrate into document
    c. Insert and format image files, including modifying with effects and updating properties to ensure effective integration with text and other objects

    (TN Reading 3, 5, 7, 9; TN Writing 4, 7)

Spreadsheet Applications

8) Building on standards from *Computer Applications*, use a spreadsheet application to create and manage worksheets and workbooks for business functions such as invoices, financial statements, data review and summarization, and statistical analysis.
    a. Create new workbooks from blank worksheets, templates, imported and non-native files
    b. Navigate through existing workbooks by searching for specific data, inserting hyperlinks, changing worksheet order and using “Go To” and “Name Box” functions
    c. Format worksheets and workbooks using colors, page setup options, columns and rows, themes, watermarks, headers and footers, and setting data validation
    d. Customize options and views for workbooks, including hiding columns, rows, and worksheets, editing toolbars, ribbons, and macros, freezing panes and utilizing short cut keys
    e. Configure worksheets and workbooks for effective printing and saving, including setting print area, changing file formats, setting print scaling, and maintaining backwards compatibility if needed

    (TN Reading 3)

9) Given a specific document purpose, accurately create cells and ranges to effectively manage data, draw conclusions from analysis, and structure for ease of readability.
    a. Insert, review, and append data in cells and ranges using find and replace, copy and paste, AutoFill, expanding data across cells, and inserting and deleting cells
    b. Format cells and ranges for a given purpose, including merging cells, modifying alignment, font, wrap-text, and indentation and employing WordArt and number formatting when appropriate
    c. Order and group cells and ranges by applying conditional formatting, inserting sparklines, transposing columns and rows, creating named ranges, inserting subtotals, and collapsing groups of data

    (TN Reading 3, 5)

10) Translate quantitative or technical information between text, visuals, data, and equations by accurately creating and using tables.
    a. Effectively navigate between tables and ranges, adding or removing cells and defining titles
    b. Modify styles and format of a table to convey meaning, including applying styles, banding rows and columns, and inserting totals or averages
    c. Filter and sort information effectively, including filtering records, sorting data on multiple columns, changing sort order to highlight specific information, and removing duplicates to enhance analysis (TN Reading 3, 5, 7, 9)

11) Accurately determine appropriate calculations (formulas and functions) for analysis to draw conclusions about sets of data, including:
    a. Utilize cell range and references (relative, mixed, absolute) to complete functions accurately based on specific question sought to address, including accurate understanding of order of operations
    b. Summarize data with functions such as sum, average, minimum, maximum, and count
    c. Utilize conditional logic in functions (if-then statements) to accurately discriminate data for analysis

    d. Format and modify text with functions

(TN Reading 3; TN Math N-Q)

12) Analyze needed structure and objects (such as charts and graphs) to convey particular meaning or draw conclusions from a dataset.
    a. Create charts and graphs that summarize appropriate data series, including differentiating between rows and columns in source data
    b. Format charts and graphs by modifying legends, sizes, parameters, layouts and styles and positioning
    c. Insert and format an object (such as a textbox, SmartArt or image) and format its border, positioning, properties, styles and effects and colors

(TN Reading 3, 4, 6, 7; TN Writing 4, 6)

Presentation Software

13) Building on standards from *Computer Applications*, use presentation software to create and manage clear and coherent multimedia presentation materials for a given audience, task, purpose, and length of presentation. Fluently navigate software to:
    a. Create new presentations from blank slides, templates, and important files and/or file content (such as outlines or text from word processing files)
    b. Format a presentation to achieve a style appropriate to a given audience and industry by applying slide masters, layouts, background images, page numbers, headers and footers, and presentation themes
    c. Customize presentation options and views to ensure accurate page setup, printing (color/grayscale), and navigation
    d. Configure presentations to print for handouts or notes and save to maintain appropriate settings by determining most applicable handout print options, package presentations for CD, save presentations as webpages, and maintain backwards compatibility where needed
    e. Configure and present slideshows in a public speaking setting, paying close attention to slide timing, resolution, annotations, options, and appropriate views for a given presentation venue

(TN Reading 3; TN Writing 4)

14) For a given content, select and employ appropriate structure to convey meaning and organize information into categories and hierarchies appropriately, including:
    a. Add slide layouts, duplicate, hide, and delete slides, and modify slide backgrounds and styles
    b. Insert and format shapes, including applying borders, resizing, and applying styles to both custom and template shapes
    c. Order and group shapes and slides by inserting section headers, modifying slide order, aligning and grouping shapes, and displaying gridlines

(TN Reading 3, 5)

15) Create slide content that is clear and coherent, in which the development, organization, and style are appropriate to a given task, purpose, and audience, including:
    a. Insert and format text such as WordArt, columns, hyperlinks, and bulleted and numbered lists

    b. Insert and format tables and charts, including modifying rows, columns, and legends, applying styles, modifying parameters and importing from external sources
    c. Insert and format SmartArt and images, including adding shapes, changing colors, adding and moving text, resize, crop, and apply styles
    d. Insert and format appropriate media, including video and audio clips, by adjusting window size, setting start/stop times, setting options, and linking to external sources

(TN Reading 3, 7, 9; TN Writing 4, 8)

16) Effectively employ transitions and animations to convey meaning without distracting from slide content.
    a. Insert transitions between slides, manage multiple transitions, and modify transition effect options
    b. Animate slide content including applying animations to shapes and paths and modifying animation properties
    c. Set timings for transitions and animations to ensure appropriate duration, order, and start/stop times for effects

(TN Reading 3, 6)

17) Develop, manage, and strengthen content by planning, revising, and editing presentations, including:
    a. Merge content from multiple presentations and reuse appropriate slides with separate or similar formatting
    b. Track changes and resolve differences (such as discarding changes or managing comments) to focus on what is most significant for a specific purpose and audience
    c. Protect and share presentations using encryption, passwords, media compression, and permissions, while ensuring accessibility and compatibility are maintained for a given situation or scenario

(TN Reading 3; TN Writing 5)

Information Management & Integration

18) Throughout the course, conduct a sustained research project to answer a question or solve a problem. Synthesize research into an argument that is established, developed, and supported with multiple sources of data and evidence. Demonstrate authentic technical skills in word processing, presentations, and spreadsheet applications, effectively combining functionality of multiple software applications to present a coherent final project, including a report (with imported data, appendixes, etc.) and presentation with appropriate citations from text. Use selected technology to produce, publish, and update final projects. (TN Reading 1, 2, 7, 8, 9; TN Writing 1, 4, 5, 6, 7, 8, 9)

19) Select a historical event, scientific procedure, or technical process to narrate in a comprehensive report and presentation, practicing effective word processing, spreadsheet, and presentation skills. Develop and strengthen writing and data organization through planning, revising, peer-review, editing, and rewriting throughout the course. (TN Reading 1, 2, 5, 7, 9; TN Writing 2, 4, 5, 6, 7, 8, 9)

Note: Teachers who want to provide additional training in database operations and/or additional software applications (such as email platforms), may add to these standards to create an honors or two-credit course. For additional recommendations on this option, please reach out to the cluster consultant.

Standards Alignment Notes

*References to other standards include:

- TN Reading: Tennessee State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects; Reading Standards for Literacy in Science and Technical Subjects 6-12; Grades 9-10 Students (page 62).
    - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standard 10 at the conclusion of the course.
- TN Writing: Tennessee State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects; Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6-12; Grades 9-10 Students (pages 64-66).
    - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standards 3 and 10 at the conclusion of the course.
- TN Math: Tennessee State Standards for Mathematics; Math Standards for High School: Number and Quantity.
    - Note: The standards in this course are not meant to teach mathematical concepts. However, the concepts referenced above may provide teachers with opportunities to collaborate on lesson planning. Students who are engaging in activities listed above should be able to demonstrate quantitative reasoning as applied to specific technical concepts. In addition, students will have the opportunity to practice the habits of mind as described in the eight Standards for Mathematical Practice.
- P21: Partnership for 21st Century Skills Framework for 21st Century Learning
    - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.